Listing of Claims:

1. (Previously presented) An apparatus for dynamic power control of a processor based on a thermal condition, comprising:

a sensor to measure a thermal characteristic of a processor with a clock frequency;

a circuit, responsive to the measured thermal characteristic satisfying a pre-determined threshold, to reduce the clock frequency of the processor, the circuit including a performance demanding level input to determine a level of sensitivity for frequency reduction.

2. (Original) The apparatus of claim 1, wherein the thermal characteristic includes temperature and rate of temperature change.

3. (Original) The apparatus of claim 1, wherein the circuit includes a frequency generator and a logic circuit.

4. (Original) The apparatus of claim 1, wherein the circuit reduces the clock frequency by less than fifty percent.

5. (Original) The apparatus of claim 1, wherein the circuit reduces the clock frequency by removing a pre-determined number of transitions from a signal producing the clock frequency.

6. (Original) The apparatus of claim 1, wherein the sensor and circuit produce a higher operating temperature for the processor.

7. (Previously presented) A method for dynamic power control of a processor based on a thermal condition, comprising:

measuring a thermal characteristic of a processor with a clock frequency;

reducing the clock frequency in response to the measured thermal characteristic satisfying a pre-determined threshold, and based on determining a level of sensitivity for frequency reduction.

8. (Original) The method of claim 7, wherein the step of measuring includes measuring temperature and rate of temperature change.

9. (Original) The method of claim 7, wherein the step of reducing includes reducing the clock frequency by less than fifty percent.

10. (Original) The method of claim 7, wherein the step of reducing includes reducing the clock frequency by removing a pre-determined number of transitions from a signal producing the clock frequency.

11. (Original) The method of claim 10, wherein the step of reducing includes reducing the clock frequency in response to the measured thermal characteristic satisfying a pre-determined threshold to produce a higher operating temperature of the processor.

12. (Previously presented) A method for using control logic to provide dynamic power control of a processor based on a thermal condition, comprising:

entering a first state from a second state in response to a measured thermal characteristic of a processor with a clock frequency failing to satisfy a first pre-determined threshold where the first state outputs the clock frequency for the processor and the second state reduces the clock frequency for the processor;

remaining in the first state in response to a measured thermal characteristic of the processor failing to satisfy the first pre-determined threshold; and

entering the second state from the first state in response to a measured thermal characteristic of the processor satisfying the first pre-determined threshold, and based on determining a level of sensitivity for frequency reduction.

13. (Original) The method of claim 12, wherein the thermal characteristic of the processor includes temperature and rate of temperature change.

14. (Original) The method of claim 12, further comprising:

entering a third state from the first state in response to a measured thermal characteristic of the processor satisfying a second pre-determined threshold where the third state waits for a measured thermal characteristic of the processor to satisfy a third pre-determined threshold to reduce the clock frequency for the processor;

remaining in the third state in response to a measured thermal characteristic of the processor failing to satisfy the third pre-determined threshold; and

entering the first state from the third state in response to a measured thermal characteristic failing to satisfy the second pre-determined threshold.

15. (Original) The method of claim 14, wherein the second pre-determined threshold is a temperature threshold, and the third pre-determined threshold is a rate of temperature change threshold.

16. (Original) The method of claim 14, further comprising:

entering the second state from the third state in response to a measured thermal characteristic of the processor satisfying the third pre-determined threshold;

remaining in the second state in response to a measured thermal characteristic of the processor satisfying the third pre-determined threshold; and

entering the third state from the second state in response to a measured thermal characteristic of the processor failing to satisfy the second pre-determined threshold.

17. (Original) The method of claim 16, wherein the second pre-determined threshold is a temperature threshold, and the third pre-determined threshold is a rate of temperature change threshold.